



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

h

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/707,627

12/25/2003

Chien-Ming Tsao

OTMP0062USA

1626

27765

7590

02/10/2005

NORTH AMERICA INTERNATIONAL PATENT OFFICE (NAIPC)

P.O. BOX 506

MERRIFIELD, VA 22116

EXAMINER

BLACKMAN, ROCHELLE ANN J

ART UNIT

PAPER NUMBER

2851

DATE MAILED: 02/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/707,627

**Applicant(s)**

TSAO ET AL.

**Examiner**

Rochelle Blackman

**Art Unit**

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Specification***

The disclosure is objected to because of the following informalities: "circuit board 13" appears throughout the entire specification and should be - -circuit board 13- -. Appropriate correction is required.

### ***Claim Objections***

Claims 1, 9, 11, and 12 are objected to because of the following informalities: in claim 1, line 7, claim 11, last line of the claim, and claim 12, line 3, "broad" should be - - board- -; in claim 9, line 2, - -a- - should be between "is" and "digital". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-3 and 5-10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted Prior Art in view of Fujimori et al. (U.S. Patent No. 6,053,616).

Art Unit: 2851

Applicant's admitted prior art discloses a fixing structure (see FIGS. 1 and 2 of Applicant's admitted prior art) for a light valve, comprising: a light valve (11); a connector (12) to fix said light valve, which has one inner surface being stuck to a surface of said light valve; and a circuit board (13) which is stuck to an outer surface of said connector and screwed on said projection apparatus by means of screwing devices; wherein said connector has a plurality of conducting pins (121) which pass through said inner surface and said outer surface; wherein said inner surface and said outer surface are provided for electrical connection (see "circuit board" 13 and "conducting pins" 121 in relation to "connector" 12); wherein said outer surface has at least one fixing cavity and at least one fixing device which has one end pressing said fixing cavity and the other end screwing to said projection apparatus; wherein said light valve is digital micro-mirror device (see paragraph [0004] under Description of the Prior Art of applicant's specification); wherein said circuit board is a printed circuit board (also see paragraph [0004] under Description of the Prior Art of applicant's specification); wherein said outer surface of said connector has at least one positioning rod (see "connector" 12 in FIGS. 1 and 2 – although not reference, the "connector" 12 appears to be identical to the "connector" of applicant's invention and "connector" 12 appears to have positioning rods located at the top and bottom at opposite ends like the "connector" of applicant's invention).

Applicant's admitted Prior Art does not appear to disclose a container as to which the light valve is placed inside thereof and the connector is fixed in to fix the light valve; wherein the bottom of the container erects three positioning rods to form a plane for

Art Unit: 2851

positioning said light valve; wherein the connector is adhered and fixed to said container; wherein said connector is screwed to said container; and said circuit board has at least one positioning hole in accordance with the position of said positioning rod.

Fujimori teaches providing a container (55, 64, 75 of FIGS. 5, 7, and 8) as to which a light valve (40R) is placed inside thereof and a connector (52, 62, 72) is fixed in to fix the light valve; wherein the bottom of the container erects three positioning rods (55d, 64f and 75d) to form a plane for positioning said light valve; wherein the connector is adhered and fixed to said container (see 52d, 62f, 72d); and wherein said connector is screwed to said container (see 62f and 66).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Applicant's admitted Prior Art with a container with the salient features of Fujimori, in order to provide a light valve mounting mechanism that avoids direct handling of the light valve, preventing damage to the light valve (see col. 1, lines 44 to col. 2, line 11).

It also would have been obvious to one ordinary skill in the art at the time the invention was made to provide the circuit board of Applicant's admitted Prior Art with at least one positioning hole in accordance with the position of said positioning rod of the container for the purpose of providing additional security of the circuit board to the connector, thus assuring stability of the circuit board during assembly and disassembly.

Art Unit: 2851

2. Claim 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted Prior Art in view of Fujimori et al. (U.S. Patent No. 6,053,616) as applied to claim 1 above, and further in view of Muramatsu (U.S. Patent No. 6,191,838).

Applicant's admitted Prior Art and Fujimori disclose the claimed invention except for the connector having a cavity formed by an elastic frame.

Muramatsu discloses a connector (42, 43 of FIG. 13A) having a cavity formed by an elastic frame (see col. 12, lines 30-35).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a connector having a cavity formed by an elastic frame, as taught by Muramatsu in order to fix the light valve inside the frame (see col. 12, lines 30-35).

3. Claim 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted Prior Art in view of Fujimori et al. (U.S. Patent No. 6,053,616) as applied to claim 1 above, and further in view of Miyajima (U.S. Patent No. 4,963,001).

Applicant's admitted Prior Art and Fujimori disclose the claimed invention, except for a cooling fan which is placed at the outside of said circuit board, a plurality of screwing devices passing through said cooling fan and said circuit board to said projection apparatus.

Miyajima teaches providing a cooling fan (180), which is placed at the outside of a circuit board (112') with a plurality of screwing devices (190) passing through said cooling fan.

Art Unit: 2851

Since Applicant's admitted Prior Art already discloses "circuit board" 13 has a "plurality of screwing devices" (14) passing through the "circuit board" 13 to the projection apparatus, it would have been obvious to one ordinary skill in the art at the time the invention was made to provide the Applicant's admitted prior art with a cooling fan on the outside the "circuit board", as taught by Miyajima, with screwing devices passing through said cooling fan and said circuit board to said projection apparatus, in order to prevent the light valve from deteriorating due to heat (see col. 2, lines 18-21).

### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rochelle Blackman whose telephone number is (571) 272-2113. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2851

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RB

  
**JUDY NGUYEN**  
SUPERVISORY PATENT EXAMINER